In the Claims

This listing of all claims will replace all prior versions, and listings, of claims in the application:

1.   (original)   A steel wire for cold forging, which has excellent low temperature impact properties, comprising 0.10 – 0.40 wt% C, 1.0 wt% or less of Si, 0.30 – 2.0 wt% Mn, 0.03 wt% or less of P, 0.03 wt% or less of S, and a balance of Fe and impurities, wherein an austenite grain size is 5 – 20 μm, impact absorption energy is 60 J/cm^2 or more at –40°C, and tensile strength is 70 – 130 kgf/mm^2.

2.   (original)   The steel wire as set forth in claim 1, further comprising at least one component selected from the group consisting of 0.05 – 2.0 wt% Cr, 0.05 – 1.5 wt% Mo, and 0.0003 – 0.0050 wt% B.

3.   (currently amended)   A method of producing a steel wire for cold forging, ~~which has excellent low temperature impact properties,~~ comprising:

   ~~rapidly~~-heating steel, which contains 0.10 – 0.40 wt% C, 1.0 wt% or less of Si, 0.30 – 2.0 wt% Mn, 0.03 wt% or less of P, 0.03 wt% or less of S, and a balance of Fe and impurities, to a Ac3 transformation point or higher, without plastic deformation, so that an austenite grain size is 5 – 20 μm;

   cooling the heated steel; and

   heat treating the cooled steel in such a way that tensile strength is 70 – 130 kgf/mm^2 at a tempering parameter (P) ranging from 21,800 to 30,000,

which is expressed by a following Equation 1, so that impact absorption energy is 60 J/cm² or more at −40°C,

Equation 1

$$P = 1.8 \times (T + 273) \times (14.44 + \log t)$$

wherein, T is a tempering temperature (°C), and t is a tempering time (sec).

4.   (original) The method as set forth in claim 3, wherein the steel further comprises at least one component selected from the group consisting of 0.05 − 2.0 wt% Cr, 0.05 − 1.5 wt% Mo, and 0.0003 − 0.0050 wt% B.

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